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To train blind persons in the use of the long cane mobility technique and to reach a variety of clients, a demonstration used the trainee's home as a base of operation. Of 198 referrals during the 3-year project, 61 persons started training and 42 persons between the ages of 12 and 92 successfully completed the instruction. Trainees began to learn independent foot travel in their own homes, then moved to an unfamiliar indoor setting. Successful indoor mobility was followed by training outdoors in a quiet residential area with stress on mastering the mechanical aspects of cane manipulation. A semicongested area was visited next; the trainee learned to locate some stores and to ride a bus. The last phase of training was in a heavily congested area involving exposure to more distractions. Successful trainees were those who achieved a level of travel proficiency commensurate with their physical, emotional, or mental capacity. Case histories are included. (LE)

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FINAL REPORT

ESTABLISHMENT OF A SYSTEMATIC PROGRAM OF MOBILITY INSTRUCTION FOR BLIND PERSONS IN THE DISTRICT OF COLUMBIA

PROJECT NO. RD-1415-D-66-C2

DEPARTMENT OF VOCATIONAL REHABILITATION
GOVERNMENT OF THE DISTRICT OF COLUMBIA

EC003 382

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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FINAL REPORT

ESTABLISHMENT OF A SYSTEMATIC PROGRAM OF MOBILITY INSTRUCTION FOR BLIND PERSONS IN THE DISTRICT OF COLUMBIA

PROJECT NO. RD-1415-D-66-C2

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Significant Findings for the Rehabilitation Worker

Purpose

To establish in the District of Columbia, a program of teaching the validated skills in mobility developed by the U.S. Army, the U.S. Veterans Administration, and certain private agencies and to make such teaching available to blind residents of the District of Columbia who need it, especially a large number of individuals for whom such services are not currently available.

The following impressions and conclusions are felt to be important in the light of the project's experience.

1. With partially sighted trainees, the key factor was helping these persons to obtain a realistic appraisal of their visual limitations and to travel safely within these limitations. It is wise to plan follow-up training for these individuals, who may lose additional sight in the future.

2. Very early mobility instruction may not be productive unless it is accompanied by other supportive services, which enable the persons to come to grips with the losses imposed by blindness. Unrelieved anxiety concerning such things as regaining vision, losing remaining vision, affect on family and friends and affect on job, tend to neutralize the efforts of the mobility instructor.

3. Individuals receiving mobility training who did not have or who failed to develop concurrent vocational, avocational or social goals, often found themselves with a growing capacity for independent movement but no place to go. This is particularly true of older persons and the situation presented somewhat of a dilemma. The D.C. Department of Vocational Rehabilitation has not been able to provide appropriate supportive services to those who cannot establish vocational feasibility. Also, it was felt that the time and effort of the mobility project training staff should not be dissipated in organizing leisure time activities for these trainees.

4. Daily instruction over a period of several months should be the aim of any program which intends to produce a stable, well-oriented foot traveler.

5. The effectiveness of mobility training with institutionalized blind persons seems clear, in that the independence created makes them more acceptable residents or patients. With respect to mental patients, however, an additional potential benefit may have been identified which relates to an improvement of their psychiatric status. These factors need to be explored more thoroughly.

6. The job of the mobility instructor can be made easier and more effective with the services of a well qualified social worker because of the wide variety of social, economic, and emotional

problems that accompany blindness. By well qualified is meant one who has knowledge of blindness and understands it's social, economic, and emotional affects on persons (family, general public and blind persons themselves).

The value of the social worker in providing comprehensive services, particularly with newly blinded persons, should be stressed. Often without this supportive service many persons eligible for mobility training are unable to accept or benefit effectively from the training because of the necessity of coping with so many additional problems. The project's experience also indicates that a social worker is effective in helping families of blind persons to deal with their personal misgivings about mobility training. It is evident that without the approval, aid, and encouragement of the family, mobility training is difficult to carry on and it's effects are easily attenuated.

The following impressions are drawn from experience in mobility training with children.

1. Blindisms in children tend to diminish or become less pronounced following mobility training. This is particularly true among blind children who are thrown together with sighted children in an integrated school program. It is felt that mobility instruction gives impetus to this, but that daily association with sighted children is the dominant factor.

2. Blind children receiving mobility instruction usually will exhibit some negative feelings about using the cane in certain situations. The reaction is by no means specific or standard but it occurs in a high percentage of cases. It seems to occur when the young trainee decides perhaps unconsciously, that the cane stands between him and his sighted peers. Canes left in lockers during the school day or hooked around the neck while traveling to and from school with friends are obvious examples. It is a part of the mobility instructor's art to determine when these attitudes begin to undermine the concept of realistic safe independence, which he wants to develop in his young pupil.

3. A program of mobility instruction should have enough permanence and flexibility to allow for a temporary suspension of training with the intention to resume it again at some specified time. For example, it may not be appropriate to carry the training of a 12 year old child into the more advanced phases of training in heavy traffic if this is not necessarily a part of his daily pattern of living.

4. Work with pre-school age blind children points out the desirability of beginning sensory training with the youngster as soon as it is possible. The quality of training during these formative years may set the pattern or level of independence they will achieve later in life. Whereas a cane is not desirable at this age, sensory training and orientation cannot be too forcefully emphasized. The necessity for working closely with the family to accept and

reinforce these techniques is also vitally important.

5. Work with the mentally retarded blind children pointed out the necessity of limiting the training to the simpler levels. Of course, degree of retardation and visual acuity are key factors in setting the limitation. It is not an impossible task, though it does require much patience and a wide imagination.

TABLE OF CONTENTS

	Page
I. Introduction	1
II. Methodology	4
III. Results	8
IV. Discussions and Implication of Results	29

I. Introduction

Background Information

This project has it's roots in the experience of U.S. Servicemen blinded in World War II. In the U.S. Army General Hospital, Valley Forge, Pennsylvania, Lieutenant Richard E. Hoover took the lead in developing a travel technique for blinded soldiers utilizing a cane of extraordinary length. This "Long Cane" technique when properly employed, gives the blind foot traveler reasonable protection from most of the hazards encountered while moving from place to place.

The extended cane is moved rhythmically from side to side and touched lightly to the ground at each extremity of the arc as the blind traveler walks. Thus employed, the cane taps the ground ahead and gives early warning of roughness in the terrain, obstacles in the path, steps up, steps down and the like.

Training in the use of the remaining senses is a critically important supplement to instruction with the long cane, and success in independent foot travel by a blind person results from a blending of these ingredients. In the years following World War II, this technique for restoring and improving independent mobility in blind persons was elaborated and refined by use with blind clients in both public and private agencies. Chief among these were the Central Rehabilitation Section for Visually Impaired and Blinded Veterans in the U.S. Veterans Hospital, Hines, Illinois and the Saint Paul's Rehabilitation Center, Newton, Massachusetts, operated by the Catholic Guild for all the Blind, of Boston, Massachusetts.

By 1955 a growing number of agencies serving blind persons throughout the country were offering foot travel training purportedly according to a technique referred to variously as the Valley Forge technique, the Hoover technique, the Hines technique or the Long Cane technique. The bulk of mobility training was occuring in rehabilitation centers where clients lived for several weeks or several months while engaging in a variety of personal adjustment or reorganizational activities. To this point the training of mobility instructors was accomplished by apprenticeship or tutorial arrangement. Some proponents of independent foot travel for blind persons began to feel that certain basic points about the long cane technique were being watered down. They felt that not enough attention was being given to principles and standards in this training so important in the rehabilitation of blind persons.

Gradually, this concern produced a formalized approach to the training of mobility instructors, and in 1960, Boston College in Chestnut Hill, Massachusetts, established a Graduate program in Peripatology within the Department of Special Education. The following year, Western Michigan University in Kalamazoo, Michigan, offered a similar academic program leading to a Masters Degree in Education specializing in Orientation and Mobility of the Blind. Thus, by the end of 1961, it could be said the Long Cane technique was thoroughly validated and that a professionally oriented academic based training

program was established to train mobility instructors.

Statement of the Problem

How could confident instructors best offer training in this valid mobility technique to all blind persons who were in a position to benefit from the experience? The problem had several aspects. Traditionally, the highest quality of training in mobility was available in rehabilitation centers. A few centers sent instructors into the local community on occasions, but by and large, the training was focused upon those who had come to the rehabilitation center from elsewhere. Moreover, the client population in rehabilitation centers tended to represent the young to middle age adult; e.g. the vocational rehabilitation agency client whose adjustment training program was part of an overall vocational rehabilitation plan. The net result of this was that children, older persons, and those considered to be vocationally infeasible for any reason, did not have access to adequate mobility training. At this time, considerable thought was being given to the need for mobility among blind children. The question of training readiness and the age at which the cane should be introduced was being discussed, but relatively few blind young people were actually receiving regular mobility instruction. Moreover, most of the residential schools for blind children showed a curious reluctance to introduce into their curriculum, a program of independent foot travel for blind students. This whole picture was complicated by the then current scarcity of qualified mobility instructors. For instance, the few Public School Systems which were trying to supply their blind students with some mobility instruction, usually contracted for these services with a local agency. Even when the quality of this service was good, it often happened that the blind child got only intermittent instruction. Therefore, in 1963 it could be said generally that the old, the young, and those considered to be vocationally infeasible for any reason, did not have access to high quality and an adequate quality of services.

The purposes of this mobility project, consequently, were set forth as follows:

General

1. To re-emphasize the importance of mobility to blind persons as a means of achieving greater capability for self fulfillment and rehabilitation.

2. To establish in the District of Columbia, a program of teaching the validated skills in mobility developed by the U.S. Army, the U.S. Veterans Administration, and certain private agencies.

3. To make such teaching available to blind residents of the District of Columbia who needed it, especially a large number

of individuals for whom such services were not currently available.

Specific

1. Through systematic teaching by competent instructors, to show blind people themselves that it is possible to get about without sight thus leading to greater capability and opportunity to engage in activities which require the freedom to come and go independently.

2. To demonstrate the value of the increased capability which can be achieved through such training, both in terms of the individual well-being of blind residents, and the increased availability of the trainees for rehabilitation.

3. To make arrangements for identifying clients in need of mobility instruction, for bringing clients and instructors together, and to guarantee that eligible clients, once accepted, will continue training until either proves ineffective.

4. To assure that each client considered for training is carefully screened as to attitude, physical conditions, degree of vision and need for training. Priority will be given to blind persons in need of mobility training who are not presently feasible or available for vocational rehabilitation services or to whom services cannot be extended.

Review of Relevant Literature

A review of the literature available in November, 1963, when this grant application was submitted, supports the idea that the long cane technique was a valid tool which could be used to create or to restore independent mobility in blind persons. Examples of this are:

Hoover, Richard E., "Foot Travel at Valley Forge, " Outlook for the Blind, Vol. 40, (November, 1946), pp. 246-251.

Hoover, Richard E., "Orientation and Travel Techniques for the Blind," American Association of Workers for the Blind Convention, Proceeding. (1947), pp. 2-32.

Ball, Martha J., "Mobility in Perspective," Blindness, 1964. American Association of Workers for the Blind, Washington, D.C.

Curtin, George T., "Mobility: social and psychological implications," New Outlook for the Blind, Vol. 56, No. 1 (January, 1962), pp. 14-18.

The literature also indicated an interest in mobility training for children. This concern, however, seems to spring from presumed needs rather than the results from training with a representative group of blind children. The literature was almost silent concerning mobility training for blind persons not associated with some tangible goal such as employment, education and the like. This group would include older blind persons as well as those not actively involved with vocational rehabilitation.

Since this demonstration project has been in operation, quite a lot has been written about mobility with blind children. Examples of this are:

"Mobility Goes to High School," Department of Health, Education, and Welfare, Vocational Rehabilitation Administration, July/August, (1966).

Eichorn, John R., "The Three R's plus P (peripatology), for Children who are Blind," The Elementary School Journal, (March, 1964).

Seelye, Wilma S., and Thomas, John E. "Is Mobility Feasible with Multiply Handicapped Blind Children?" Exceptional Children, (May, 1966), New Outlook, (June, 1966).

Smith, Benjamin F., Training in Mobility (for school children), The Lantern, (March, 1965).

Miller, Josephine, "Mobility Training for Blind Children," New Outlook, (December, 1964).

Very little yet has appeared concerning mobility needs and mobility training of older blind persons. There is nothing in the literature to date regarding a community wide mobility training program designed to fill the needs of all groups of blind persons living in a particular locality.

II. Methodology

One of the biggest factors differentiating this mobility project from most mobility instruction in the past is that the project's base of operation was the trainee's home, instead of a rehabilitation center. A number of important points flow from this difference. In a rehabilitation center, the pace of instruction must be geared largely to the length of the blind person's stay. The project mobility instructors could plan their daily instruction with the pace of the trainee's progress. In a rehabilitation center, mobility instruction is given in representative areas of the city or town which may or may not approximate the travel environment of the trainee when he returns home. The project's mobility instructors begin work in the trainee's home, and move with him into his own neighborhood and later into other sections of the community in which he might travel. This

flexibility in the project's operation made it possible to deal more realistically with the practical needs of most trainees. With school children, normal lesson plans were fitted naturally into the trainee's own real environment. Also, with older persons, limited goals commensurate with limited capacity were integrated into the project's operation without strain.

The demonstration project began active operation in February, 1964, with the following staff: Project Director, Project Supervisor, 2 Mobility Instructors, Project Social Worker, and Clerk-typist.

Through work done prior to the formal start of the project, the staff was able immediately to begin screening perspective trainees. A list of potential trainees from the files of the Department of Vocational Rehabilitation and other agencies in Washington, D.C. were available for this purpose. As the project progressed, names of additional candidates from these original sources and new sources were referred, and the screening process has been an ongoing activity during the entire period.

Screening

Initially, the screening of trainees was done by a team consisting of the project supervisor, the mobility instructors and the project social worker. Later, this responsibility was delegated to the senior mobility instructor.

All candidates for training were interviewed in their homes by one or more members of the staff. At this time, a general assessment was made of the candidates' interest in mobility, prior mobility training, patterns of daily activity, general health, living arrangements, and home environment. Prior information about prospective trainees ranged all the way from complete medical and psycho-social histories, to nothing but a presumed need for mobility training in the mind of a friend or neighbor. Unless early interviews revealed disinterest in mobility training, or gross physical or emotional infirmities arrangements were made to secure general medical, ophthalmological, and audiometric data. This information was evaluated with the assistance of the Department's Medical Consultant, and if there was nothing to contra-indicate further consideration, the candidate's name was placed on a waiting list.

It was decided early in the project to approach the question of mobility instruction with the widest flexibility commensurate with good practice. It was anticipated that the effect of blindness upon those with whom the project proposed to work would pose problems not encountered to a significant degree with those receiving similar training in a rehabilitation center. Therefore, increased emphasis was placed upon working with the trainee as and where he was found. A sincere effort was made to choose for training those who would benefit, but no attempt was made to choose only those destined to

become "accomplished foot travelers." It was agreed that extra time and extra care would be required with older people and with children in order to interprete properly, the role of the long cane in a realistic approach to their mobility problems. Moreover, it was felt that some partially sighted candidates who needed training would reject, initially, the idea of employing a cane. It was agreed to work with these individuals to evaluate the extent of their training needs, and the extent of their capacity to utilize sensory training in traveling safely without a cane. Whenever the mobility instructor felt such a trainee was beginning to get "out of his depth" without cane instruction, the trainee would either accept cane instruction or be dropped from the project.

Training

When the mobility candidate has been screened and accepted as a mobility trainee, an initial summary sheet was filled out and placed in an active case folder along with medical, ophthalmological, and audiometric reports. Daily progress notes on instruction were entered in the case folder as training progressed. Periodically, these progress notes on each trainee were reviewed by the project supervisor with the mobility instructors. The needs and capacity of each trainee were assessed on a continuing basis and modifications to the basic approach were made when necessary in order to assure maximum benefits for each trainee.

The following brief description of mobility training will be useful in understanding and assessing the remainder of this report. It should be remembered, of course, that this training outline was applied flexibly in keeping with individual differences among trainees.

Basic Orientation

The new trainee begins to learn safe independent foot travel usually in his own home. He is taught to move about comfortably in familiar surroundings. He learns to take directions from stationary objects, to judge distances between objects, to protect himself from blundering into objects and otherwise to be graceful in his movements. He learns to visualize schematically if necessary, the shape and dimension of rooms and other spaces and their relationship to one another, the arrangement of furniture, and the relative position of fixed and movable objects.

Next, in unfamiliar indoor setting utilizing the long cane, the trainee learns to ascend and descend stairways, to negotiate hallways, and to locate doorways. During this phase of training the trainee is shown how to walk with a sighted guide holding his companion's arm lightly just above the elbow. This causes him to trail his guide by about a half pace making it relatively easy to follow the guide's movements and directions.

Residential Travel

When the trainee has mastered the basic technique of mobility indoors, the instruction moves outside to a quiet residential area where pedestrian and motor traffic are minimal. Here the long cane technique is introduced and considerable stress is placed upon mastering the mechanical aspects of cane manipulation. Until the trainee is able to employ his cane automatically, he cannot free his mind for the important task of interpreting the information which his cane and remaining senses bring to him. Learning to walk without constant veering, keeping "in step" with the cane, and preventing the cane tip from sticking in cracks in sidewalks and in grass are tedious and troublesome harassments which the new trainee must overcome.

Learning to make simple street crossings is also a part of this phase of training. Initially, it is begun at intersections without automotive traffic. The trainee is taught how to properly locate the curbs and to line himself up at right angles with the street which he intends to cross. Later this same procedure is followed with light automotive traffic. Here the trainee is taught to use traffic sounds, not only to determine when it is safe to cross, but also to assist him in lining up for straight crossings.

Visualizing the arrangements of streets is very important to the blind traveler. If necessary, he is helped to understand the usefulness of address numbers, the ascending and descending order of numbered streets, and the alphabetical significance, if any, of named or lettered streets. He begins to learn how to ask for and receive directions clearly and efficiently.

In his own neighborhood, the trainee learns the importance and the relative position of landmarks which he can use to orient himself. These might include trees, telephone poles, mailboxes, fire plugs, bus stops, fences, walls, hedges, alleyways, trash receptacles, and others. The culmination of the training in this phase is the trainee's ability to travel a predetermined route, to locate an objective, and to return to his starting point without assistance from the instructor. When he has demonstrated that he can travel comfortably and effectively in a residential area, the trainee is ready for the next phase of mobility.

Semi-Congested Travel

The trainee receives a verbal and physical orientation to a more heavily traveled portion of the city such as a small business area. Here he meets heavier pedestrian and automotive traffic. He is taught how to cope with wider sidewalks, broader streets, intersections controlled by traffic lights, and greater and potentially distracting noise.

Using his previously gained knowledge and skill, he learns to locate additional objectives such as banks, barber shops, and

bakeries. He learns to enter these premises, conduct his business, and depart without assistance. He learns how to accept and refuse assistance from sighted persons diplomatically. He is exposed to crossing a well traveled street "with the light" while learning to interpret a variety of sounds and cues.

An introduction to public bus transportation may occur at this point. This encompasses a thorough orientation to a bus using a vehicle which is not in service. It is important to know the exact location of the fare box and the exact arrangement of the seating which is standard on most buses. Of equal importance, is a working knowledge of the location of the rear door, the hand rail for use while standing, and the pull cord used to signal for a bus stop. In addition, the trainee learns techniques for locating empty seats unobstrusively. Again the trainee is required to demonstrate his proficiency by traveling unaided, perhaps from a point in a residential area to some objective in an adjacent shopping area with which he has been familiarized, and back to his starting point. When this sort of performance has been repeated several times, with good technique, the trainee is ready for the final phase of mobility.

Heavily Congested Travel

This phase of training involves instruction in downtown areas. Here, some automotive and pedestrian traffic lights (walk-don't walk) require all automotive traffic to stop and all pedestrians to go during one phase of the traffic light cycle. In these situations the trainee is denied automotive traffic sounds as directional guides. Also, pedestrians are allowed to cross these intersections diagonally, if desired, and the trainee may find the flow of pedestrian traffic unreliable.

At this point the trainee is exposed to department stores, large office buildings and bus terminals. Revolving doors, escalators, and elevators are also encountered, probably for the first time. Bus transportation usually involves one or perhaps more than one transfer. The sidewalks are more congested, the noise is greater and more distracting. There is hustle, bustle, and confusion. The trainee is now capable of coping with these conditions as a result of systemized instruction which he has now mastered.

III. Results

During the span of this three year project, 198 persons were referred for mobility training from 17 different community agencies. Of these persons 61 started training, and 42 successfully completed mobility instruction. A person is judged to have completed training when he has achieved a level of travel proficiency commensurate with his physical, emotional, or mental capacity. Six persons were suspended or terminated short of some satisfactory level and 13 persons

are currently in training. Forty-six individuals are awaiting training and the remaining 91 either were disinterested or found to be physically, emotionally, or mentally unsuitable for mobility instruction.

Characteristics of Trainees

Source of Referral

Individuals were referred for training from seventeen agencies and organizations within the community as follows:

Washington Hospital Center	53
Freedmen's Hospital	8
George Washington University Hospital	1
D.C. General Hospital	10
Saint Elizabeths Hospital	5
Northwest Central Clinic	7
National Capital Housing Authority	
Arthur Capper Clinic	1
Claridge Towers	5
Garfield Terrace	14
Department of Public Welfare	
Public Assistance Department	14
Child Welfare Department	1
Columbia Lighthouse for the Blind	13
Pilot School for Blind Children	5
D.C. Public School System	10
District Training School	1
Department of Vocational Rehabilitation	49
Private Physician	1

It is interesting to note that eighty-three or forty-two percent of all cases referred were from hospitals. The second highest referral source, forty-nine or thirty percent, were from the Department of Vocational Rehabilitation counselors or the Register for the Blind.

Age

The ages of the individuals who were referred for training ranged from 3 to 92 years. Seventeen were between 3 and 20; twenty-eight were between 21 and 40; seventy-four were between 41 and 60; seventy-four were between 61 and 80; and five were between 81 and 92.

The ages of the individuals who completed training ranged from 12 to 92. Of these, twelve were between 12 and 20; six were between 21 and 40; sixteen were between 41 and 60; six were between 61 and 80; and two were between 81 and 92.

The ages of the individuals who remain in training range

from 3 to 76. Of these, five are between 3 and 20; one is between 21 and 40; four are between 41 and 60; and three are between 61 and 80.

The ages of the individuals who were suspended ranged from 36 to 63. One was between 21 and 40; four were between 41 and 60; and one was between 61 and 80.

Visual Acuity and Visual Field

Nine of the individuals who entered training were totally blind. Fifteen had vision in their better eye reported as 5/200 or less; thirteen had vision in their better eye reported as being between 5/200 and 20/200. Fourteen had central visual acuity in the better eye reported as greater than 20/200 with the field restricted to less than 20 degrees.

Prior Mobility Training

Sixteen trainees reported having received some mobility training in the past. The other forty-five claimed to have received none.

Sex

Of the total referees, ninety-eight were male and one hundred were female. Of those who entered training, thirty-eight were male and twenty-three were female.

Rejected During Screening

This group of ninety-one people comprised slightly less than half of the one hundred and ninety-eight referred for mobility services. The various referral sources were encouraged to refer all persons apparently in need of mobility training and to leave the decision-making to the project staff. As expected this resulted in the referring of many individuals for whom training was not appropriate at the time of the initial interview.

A minority of this group was barred from mobility training because of general infirmity associated with age, handicapping disabilities in addition to blindness. The bulk of these persons expressed disinterest in the training or reluctance to engage in it following an explanation of the project's aims and method of operation. It is interesting to note that a few who might have remained in this category subsequently reconsidered, and either entered training or are currently awaiting training.

A high proportion of those not selected for training were older persons. One half of them were sixty-one years of age or older, whereas only forty percent of the total referee group was characterized by visual impairments of long standing.

Regarding the sources of referral, a significantly high proportion of these individuals not selected for training were referred to the project from the eye clinic of a large general hospital. Referrals from this hospital were made almost entirely on ophthalmological measurements alone, unaccompanied by an evaluation of the patient's need for mobility training.

Awaiting Training

At this point, there is little to be said concerning this group but to note that the number of individuals in this category has risen steadily during the three years of mobility training. At the end of the first year of operation, the waiting list contained 10, during the second year 22, and now at the end of the third year, the list contains the names of 46 individuals waiting to begin training. During the third year of the mobility project, a register of blind persons in the District of Columbia became operational in the Department of Vocational Rehabilitation. The register contributed heavily as a referral source and accounts, in large part, for the sharp increase in the number of those placed on the "waiting list" during the third year.

Completed Training

The following vignettes relate the training experience of the forty-two individuals whose training was terminated at some satisfactory level. It should be borne in mind, that the satisfactory completion of mobility training is a relative consideration depending upon age, physical capacity, and the development of mobility goals.

Mr. R.A. is a 68 year old male. His eye condition has been diagnosed as glaucoma. His visual acuity has been reported as bilateral light perception. Although he had received a cane from the Columbia Lighthouse for the Blind, he had received no previous mobility training.

When mobility training started, he was able to travel within his home only with great difficulty. Training was begun in his home and the aid of his wife was enlisted in order to reinforce the indoor techniques. Soon after training started, he moved to a geriatric apartment complex.

Mr. A. has received intensive and extensive training in an indoor setting and minimal training in a residential setting. He has developed into a safe and independent traveler, within the confines of his apartment complex. He did not warrant or desire additional training, at this time, because the need was not apparent. It was also evident that he had additional adjustments to make to his blindness before he will be ready or able to benefit from additional rehabilitative and habilitative efforts.

Mr. C.A. is a 58 year old newly blinded man. His eye condition has been diagnosed as corneal edema and glaucoma. His visual acuity has been reported as an enucleation of his right eye and finger-count at six inches in the left eye. Mr. A. has no other known disabilities and had not received previous mobility training.

Training was started with him about two weeks after he left Freedmen's Hospital. At that time, the following observations were made: 1) very poor sloping posture, 2) no sense of turn or direction, 3) extremely poor coordination, 4) gross disorientation and 5) a shuffling gait.

Work was initially designed to teach Mr. A how to travel within his own home. He required much continuous and repetitious work before he was taught to travel with comparative ease within his home. Nevertheless, there remains room for additional improvement in this area.

Mr. A. was taught the touch technique with a cane in an indoor setting (Mount Vernon Place Methodist Church). He made extremely slow and laborious progress. Much of this may be attributed to his mental slowness. Added to this was the fact that he remained in a turmoil over the future of his sight. Until much of this turmoil is resolved, it is doubtful if he will make any major progress toward independent travel. Further complicating the conflict is the imminence of another eye operation.

Mr. A. progressed to the point where he moved with a little more ease. He appeared to understand the mechanics of the basic techniques; however, he never developed the coordination to execute them with any degree of skill. Though he still becomes quite disoriented, there is evidence that he is better able to take a direction and to utilize certain auditory cues while traveling.

Mr. A. received training for over a year. Much of this time was spent orienting and familiarizing him with his new homes. He moved to seven different homes within a year's time. When training was terminated, he was able to travel to limited objectives within his immediate neighborhood. Training was terminated because it was felt that he had reached the highest level of travel proficiency that he was mentally capable of achieving.

Mr. T.W. is a 61 year old man. His eye condition has been diagnosed as glaucoma-cataracts. His visual acuity has been reported as 20/400, bilaterally; however, this is apparently incorrect. His visual acuity has diminished since the last report which was fairly recent. He has no other known disabilities. Although he had received a cane from the Columbia Lighthouse for the Blind, he had been given no previous mobility training.

As a result of having a cane, he had developed very poor

habits. Initially, much time was spent eliminating many of his poor travel habits. The blindfold was tried as a training tool; however, it rendered him so totally disoriented and anxious that it was decided to place more emphasis on effective utilization of sensory cues.

Mr. W. has received extensive training in residential areas, small and large business districts, on crowded department store escalators and revolving doors, and also on public transportation. Although he has developed into a moderately safe and skillful traveler, his chief problem has been over-reliance on his residual vision. As long as he has any residual vision, he will make use of it. He has also exhibited tendencies of mental slowness. He was able to grasp certain points only through repetitious and continuous training. Nevertheless, he has been taught to effectively utilize sensory cues. Since he has a realistic appraisal of his proficiency as a traveler, he should encounter no difficulty. If he should ever become totally blind, he will probably need additional re-training because of his reliance on his residual vision.

Mr. W. has been informed of the activities at Banneker Recreation Center and vcws to attend. Periodic follow-up visits will be made.

Mr. M.N. is a 15 year old student at Paul Jr. High School. His eye condition has been diagnosed as retrolental fibroplasia. His right eye has been enucleated; his left eye is reported as 10/200 with best correction. He had not received previous mobility training.

When training was started, he had sufficient vision for day travel but limited night travel. Since he encountered no major problems, his training was initially centered primarily on orientation to public transportation and better utilization of his senses. Emphasis was placed on utilization of auditory cues for street crossings. The blindfold was occasionally used to facilitate this progress. After training began, he was transferred from one elementary school to another. This necessitated an orientation familiarization to the bus route he would be required to travel and also an orientation to the new school. After working with him several weeks during that summer, he was able to make the transition with no difficulty whatever.

In the following year, work was resumed with him because he had graduated to Paul Jr. High School. This necessitated several weeks of training to familiarize him with the new route he would be required to travel to school. It also entailed a more extensive orientation to his new school. Much detailed training was involved because he was moving to a much larger school in terms of enrollment and physical plant. He has since transferred to a parochial school and continues to travel safely and effectively.

Mr. H.A. is a 57 year old man. His clinical diagnosis is simple chronic uncontrolled glaucoma, bilateral with lens opacity in both eyes and essential hypertension. His visual acuity has been reported as hand movement in his left eye and 20/30 with a restricted field in his right eye. Mr. A. had received no previous mobility training, though he had a white cane procurred from the Columbia Lighthouse for the Blind.

When training was started, Mr. A. was completely dependent on members of his family for travel. Because of the amount of vision he had, a blindfold was used extensively as a training tool. He was very nervous on several occasions throughout training. This nervousness was attributed mainly to domestic problems. His progress was fairly slow, but quite adequate. He was a very determined and well motivated person.

Mr. A. has received training in a residential setting, moderately busy areas, heavily congested areas, at street crossings, on public transportation, at revolving doors, and on elevators and escalators. He has developed into a safe and effective traveler.

Mr. F.M. is a 60 year old man. His eye condition has been diagnosed as advanced glaucoma. His visual acuity has been reported as totally blind in the right eye and 20/200 with a restricted field in his left eye. He also has a mild hearing loss in both eyes in the high frequencies. He had received no previous mobility training.

Mr. M. received approximately five months of orientation and mobility training. He was an eager, responsive and cooperative client. When work started with him, it was observed that he could travel fairly well around his immediate neighborhood; however, independent travel was confined to that area.

Mobility training with Mr. M. included work on street crossings, travel on public transportation, travel in downtown business areas utilizing department store escalators, elevators and revolving doors. He also received extensive sensory training. As the result of this training, he could travel any place within the Washington area with confidence and safety. His entire travel scope had been expanded.

Since Mr. M. does have a small amount of vision with restricted field, it is quite possible that some retraining might be necessary if he should become totally blind. Periodically, checks have been made to see if he continued to be the effective traveler that he had become.

Mr. J.W. is a 17 year old boy with a visual impairment reported as 6/200 in the better eye due to retrolental fibroplasia. As a student enrolled in a braille and sight conservation program, he completed junior high school. School authorities reported it was

doubtful that he would be recommended for senior high school, because of marginal mental capacity. When training was begun, he made slow but steady progress in mastering mobility techniques. With the aid of a long cane and his remaining vision, he became a competent, independent foot traveler in congested areas and able to use public transportation without difficulty.

Mr. M.W. is a 16 year old boy with a visual impairment reported as bilateral blindness due to retrolental fibroplasia. As a student enrolled in a braille and sight conservation program he is reported to be doing superior school work. He learned to travel satisfactorily to and from a neighborhood elementary school with the use of a long cane. He had led a rather sheltered life and considerable time, effort and patience on the part of the mobility instructor was required to develop an environment within which the boy could bring his considerable talents to bear. During the period of this report, training was aimed at assisting him to make the transition to junior high school, which was accomplished quite successfully. This boy is scheduled for additional follow-up training to help him and his family prepare for the independence required of an alert "teenager."

Mr. W.S. is a 35 year old male, who is totally blind. One eye was enucleated several years ago and recently he lost all vision in the remaining eye due to lye burns. His blindness is accompanied by a history of amnesia, dating back to 1963. He has also lost the distal segment of the thumb and the 1st and 2nd fingers of the left hand.

Although he made normal progress in his mobility training, it was interrupted many times. He reentered the hospital for surgery, his apparent discontent with his living arrangements, coupled with his antisocial involvements caused delays, and his failure to keep appointments at a local out-patient clinic where he was receiving treatment for amnesia led to his suspension from training. His suspension came during the time when he was being trained to travel via bus transportation in a semi-congested area.

Close contact was kept with Mr. S. and the medical facilities involved with him. He returned to the out-patient clinic on a regular basis, and made more stable living arrangements.

Based on his efforts to deal positively with certain problems, Mr. S. was reentered in mobility training. His progress during the later phases of instruction was steady and he completed training to become an independent foot traveler.

Mr. M.R. is a 16 year old boy with a visual impairment reported as 3/500 in the better eye due to corneal lacerations resulting from a fire cracker explosion. The accident occurred on July 4, 1964, and he missed the following school year, when he would have been in the seventh grade. In September, 1965, he

entered the residential school for blind children at Overlea, Maryland, and has been temporarily removed from the jurisdiction of this project. Training with this young man began prior to his release from definitive medical eye care. At first, he made good progress in mastering the techniques of long cane travel. At a point, however, his use of the cane became inconsistent. Apparently, he viewed its use as a barrier to normal relationships with his friends.

Miss H.L. is a 16 year old girl with a visual impairment reported as 20/200 in the better eye due to retrolental fibroplasia. As an eighth grade student enrolled in a braille and sight conservation program, she was reported as having marginal mental capacity. When training began, she had difficulty grasping basic concepts and retaining information. Her motivation waned rapidly and she resisted the use of a long cane, which led to suspension of training. Later, follow-up observation and training with her confirmed the earlier impressions. It was noted; however, that she retained and continued to use the basic techniques she had learned so laboriously. She discarded the long cane for a collapsible model and currently travels independently only in familiar areas.

Mr. W.C. is a 42 year old man with a visual impairment reported as 2/400 in the better eye due to diabetic retinopathy. Having been referred to the Department of Vocational Rehabilitation by the Social Security Administration, he denied any interest in vocational rehabilitation, but accepted the idea of mobility training. His progress was swift and he was terminated as a trainee, having completed the full range of instruction. He began to show tentative interest in a broader range of activities, and with the assistance of the mobility instructor enrolled in a class of braille instruction.

Very shortly thereafter, Mr. S. applied for vocational rehabilitation services and subsequently entered training in the management of automated food vending equipment. He is currently employed as a manager of an automatic food vending facility operated within the Randolph-Sheppard Vending Stand Program of the District of Columbia.

Mr. F.W. is a 55 year old man with a visual impairment reported as finger-counting at 10 feet in the better eye due to diabetic retinopathy. He was referred to the mobility project by a rehabilitation counselor in the Department of Vocational Rehabilitation, who felt that mobility training would be a valuable prerequisite to further planning for this client. He was making slow, but measurable progress in his training until a series of illnesses, due largely to difficulty in controlling his diabetes, made it necessary to withdraw from the program.

Although Mr. W. may never be able to engage in other rehabilitative activity, his mobility skills had reached a point commen-

surate with his physical capacity to travel independently.

Mr. J.H. is a spry 73 year old man with a visual impairment reported as bilateral blindness due to retinal detachment. Initially, there was some slight controversy regarding what was to be taught during the training. However, patience and friendly persuasion on the part of the mobility instructor resulted in steady progress toward a goal of safe freedom of movement, within a residential area, which is all that can be reasonably expected in this situation.

Mr. L.R. is a 63 year old man who is totally blind due to an unknown cause. He is a rehabilitation counselor who had observed at close range the results of mobility training and requested it for himself. His training has progressed well. His primary goal was to be able to travel independently to and from his place of employment, and this was accomplished in a relatively short period of time. Beyond that the trainee and the mobility instructor agreed additional training would be discussed at a later date.

Mrs. O.G. is a 39 year old female. Her visual acuity was reported as totally blind in her right eye and 20/70 with restricted field in her left eye. A definitive diagnosis could not be made as to the cause of her eye condition. She is reported to have received no previous mobility training.

Mrs. G. proved to be an alert, determined and well motivated person. During the time that she received training, she learned to travel very skillfully in an extended residential area. This allowed her to take care of many of her everyday needs such as shopping.

At the time training was started with Mrs. G., she was several months pregnant. The time during which she received mobility was fairly brief. It was intended to continue training after the birth of her child. After her child was born, however, her visual acuity was increased bilaterally to 20/30 with correction and happily, the need for further training no longer existed.

Miss W.H. is a 42 year old female. Her visual acuity was reported as light perception in both eyes, due to glaucoma. She was also diagnosed as having a severe hearing loss. She had received some previous mobility training from the Columbia Lighthouse for the Blind.

Miss H. was an extremely determined and resourceful person. Much work was spent on refining the previously learned mobility skills. Since Miss H. changed residences frequently, it was necessary to orient and re-orient her to her new surroundings. Because of her severe hearing loss, much painstaking effort was necessary in order to communicate with her via the manual alphabet.

Currently, she must rely on others for aid at street crossings because of her hearing loss.

Mrs. L.B. is a 58 year old female. Her visual acuity was reported as no light perception in her right eye and 20/40 with a severely restricted field in her left eye. Her eye condition was diagnosed as acute glaucoma. She had received no previous mobility training.

When work was started with Mrs. B., she was nervous but very determined. Her nervousness was attributed to her previous experiences traveling with unskilled human guides. After several lessons, her nervousness began to diminish and she began to learn very rapidly. When training was completed, Mrs. B. had received instruction in the full range of mobility training. This alert, intelligent woman reached a high degree of independent travel proficiency.

Mrs. E.W. is a 52 year old female. Her visual acuity was reported as 20/400 in her right eye with field restriction to 10 degrees, and no light perception in her left eye. Her eye condition was diagnosed as diabetic retinopathy. She is reported to have had no previous mobility training.

Mrs. W. was an alert, intelligent and determined person. Her progress was good; however, training was intermittent as a result of a flareup in her varicose veins. Nevertheless, she acquired sufficient skill to travel in heavily congested travel areas by public transportation. She was opposed to any additional services of the agency. She successfully completed all phases of training and is considered by her instructor as a competent traveler.

Mrs. N.M. is a 54 year old female. Her visual acuity has been diagnosed as light at 20 feet in the right eye and 20/50 with a severely restricted field in her left eye. Her eye condition was diagnosed as glaucoma. She is reported to have had no previous mobility training.

Mrs. M. was a highly motivated, energetic and determined person. She progressed very rapidly from travel in her home to the advanced stages of travel by public transportation in large department stores. She was a member of numerous clubs and social organizations. This tended to motivate her to travel. She developed into a highly proficient and safe traveler.

Mr. J.R. is a 55 year old male. His visual acuity was reported as 15/200 in his right eye and only light perception in his left eye. His eye condition was diagnosed as optic atrophy. He is reported to have had no previous mobility training.

Mr. R. proved to be a determined highly motivated and well adjusted client. He developed into a safe and highly proficient

traveler. Work with him began in his home setting and progressed to the advanced stages of travel by public transportation and travel in highly congested business districts. After the mobility training was successfully completed, he was referred to a vocational rehabilitation counselor for employment consultation.

Mr. H.L. is a 16 year old male. His visual acuity was reported as 3/200 bilaterally. His diagnosis was retrolental fibroplasia. He had received no previous mobility training.

Mr. L. had quite a bit of useable vision and was rather reluctant about using the cane. Initially, he started training with the emphasis on sensory training. Later, he developed an interest in learning how to use the cane. He received lessons on the use of the cane in a quiet residential setting. Since he was to be transferred soon to another school, it was felt that he could best benefit by an orientation to his new school. He was taught how to travel to school by public transportation and oriented to the school building and immediate surroundings. He was informed that additional mobility training would be available at such time as he felt the need for it.

Mrs. L.W. is a 56 year old female. Her visual acuity has been reported as 20/400 in her right eye and light at 20 feet in the left eye. Her eye condition was diagnosed as glaucoma. A secondary diagnosis of hypertension was also made. She had received previous mobility training from the Columbia Lighthouse for the Blind.

Since Mrs. W. had received some prior mobility training and traveled fairly well, she was simply given a refresher course as a prerequisite to employment. Her previous skills were refined and improved. Much work was devoted to travel on public transportation. After she completed mobility training, she was referred to the vocational rehabilitation counselor for employment follow-up.

Mr. M.T. is a 16 year old student at Browne Junior High School. His eye condition has been diagnosed as retrolental fibroplasia. His visual acuity is light perception only. He has no other known disabilities.

When training was started, it was observed that he was an eager and cooperative child who seemed sincerely interested in mobility. It was observed; however, that he was able to travel about his classroom with some difficulty. He also exhibited a few blindisms (shaking of hands and feet). Though he has only light perception, he has made very effective use of it. He was quite receptive to the use of the cane and the blindfold.

During the early stages of training he was an extremely apt pupil. He absorbed and made use of training techniques very

quickly. He was quick to integrate new skills into his normal travel pattern.

It was observed that when he entered an integrated classroom situation, he began to shun the use of the cane. Probably because he felt that it set him off from the rest of his classmates. Additional training was resumed with him because of his graduation to a junior high school. This required an orientation to the new school as well as instruction in the use of public transportation to reach the school.

Training was resumed late in the summer because his grandmother insisted that he should go to summer camp. As a result, training had to be carried over into the first part of the fall semester. He was taught how to travel to school by public transportation, though he often traveled with a friend or his sister on the bus. His general transition to junior high school appeared to have been a smooth one. There still is a tendency to shun unfamiliar crowds and to avoid the use of the cane. Periodically, follow-up visits are made to the school to observe him and to check on his progress.

Mrs. J.C. is a 65 year old female, totally blind, who completed a very limited mobility training program. Her blindness resulted from glaucoma. Although her initial performance was irregular and inconsistent in terms of proficiency with cane techniques, she was highly motivated and tried extremely hard to master each lesson. Presently, she is capable of traveling independently within her immediate environment. If long range travel is necessary she requires sighted assistance.

Mrs. F.B. is a 64 year old widow whose visual disability resulted from glaucoma. She can count fingers with the left eye at 1 foot and with the right eye at 2 feet. Because her glaucoma was controlled, Mrs. B. was able to use her residual vision very effectively while she was receiving mobility training. Her major obstacle while receiving her training was her inability to assume a rhythmic gait-cane movement. She finished a very extensive mobility training program and is presently traveling throughout the District safely and independently.

Miss H.D. is a 27 year old female whose visual impairment resulted from retinitis pigmentosa. At the time of her referral her visual acuity in the right eye was 20/60 with field restriction to less than 5 degrees, and light perception in the left eye. When she was referred to this agency she was traveling without any mobility aid, however, she was beginning to have her problems. She completed a very extensive program in mobility training which culminated in reliable and independent travel in downtown Washington. Presently, she is undergoing training for remunerative employment.

Miss S.J. is a 21 year old female who is congenitally blind. She was referred to this agency after graduating from a residential

school for the blind. When she was referred, her records indicated that she had had mobility training. However, in her evaluation it was discovered that her training had been limited to the grounds of the residential school and that she had had little or no opportunities to form concepts and gain experiences necessary for outdoor travel. Miss J. required more time to master mobility than the average client usually requires. Presently, she is a very independent and capable traveler and is attending a local business college.

Miss M.O. is a 15 year old girl with a visual impairment reported as 30/200 in her right eye and left eye had been enucleated. This girl was referred to the mobility project by the D.C. Public School System. She had been out of school for two years, presumably due to her inability to travel to and from school, on account of her visual impairment. Her mobility instructor realized early that this young woman had sufficient vision to travel independently and safely without using a cane. He worked with her to sharpen the use of this vision and to help her learn useful cues which added to her confidence, freedom, and grace of movement. It appeared that this girl's school attendance problem was caused by her mother's desire to keep her home for baby-sitting duties and not because of any serious difficulty in traveling to school.

Miss C.H. is a 19 year old girl with a visual impairment reported as 20/400 in the better eye due to corneal scarring. She is a student in the ninth grade of the residential school for blind children at Overlea, Maryland, and was referred for mobility training while she was at home in Washington, D.C. on a summer vacation. Only preliminary training was done with this young woman because of her return to the residential school. She possesses considerable useful vision and it is the mobility instructor's opinion that her biggest difficulty with independent foot travel stemmed from a surprising lack of fundamental information regarding street signs and their location, traffic signals and their use, the relationship of sidewalks to street, etc. It seems clear that this young woman has been sheltered to the point of deprivation concerning normal daily activities.

Mr. E.L. is a 23 year old man with a visual impairment reported as light perception in the better eye due to a gunshot blast. Originally, he was referred to the Department of Vocational Rehabilitation from the hospital immediately following his injury. At that time, he failed to follow through with planning for vocational rehabilitation services, but later expressed interest in mobility training. This man's mental slowness made him a somewhat indifferent trainee when training began. Later, he became a more steady and reliable trainee. He completed the full range of training to become an adequate traveler.

Mrs. M.G. is a 62 year old woman with a visual impairment reported as bilateral blindness due to excessive alcoholism. She was referred for mobility training from a psychiatric hospital where she remains a patient today. Extensive training did not produce dramatic

results with this woman. She is, however, competent to travel independently in and around familiar buildings and grounds of the hospital. She no longer represents a drain of staff time to transport her from one place to another. Following the introduction of mobility training, her psychiatric condition seemed to improve and she is currently a more stable patient.

Mr. J.F. is a 23 year old man with a visual impairment reported as total blindness due to congenital glaucoma. This young man was referred to the Department of Vocational Rehabilitation for vocational planning from the D.C. Public School System. He was referred to the mobility project because his dependence in the area of travel was holding up realistic consideration of job goals. His training proceeded steadily but somewhat slowly to a successful conclusion. Later, when he entered vocational training he traveled daily on public transportation from his home in a residential area to a downtown training site.

Mrs. T.D. is a 50 year old woman with a visual impairment reported as 20/400 in the better eye resulting from chorioretinitis due to congenital syphilis. She was referred to the mobility project from a community agency because of an expressed desire for this training. Her motivation was good and her training progressed rapidly. When her mobility instruction was successfully concluded, she received training as a vending stand operator and is currently working as a licensed vending stand operator in Washington, D.C.

Mr. J.L. is a 65 year old man with a visual impairment reported as light perception only in the better eye due to glaucoma. This man was referred to the mobility project from a community agency because of his presumed need for the training. He is a lay preacher and expressed the desire to travel independently in order to broaden his religious activities. Reasonable mobility goals with him were limited to residential travel.

Mr. H.B. is a 53 year old man with a visual impairment reported as total blindness due to lye burns. He had been a patient in a psychiatric hospital for many years, when he was referred to the mobility project. During his mobility training, he became a client for vocational rehabilitation services, and received training as a vending stand operator. In November, 1964, he was placed on a vending stand where he worked for several months. Unfortunately, he was unable to display enough over-all ability to remain employed as a vending stand operator permanently and a regular job did not materialize. During this time, however, his mobility training was brought to a satisfactory conclusion and he remained an adequate safe foot traveler.

Mr. J.T. is a 46 year old man with a visual impairment reported as total blindness due to optic atrophy. He was referred to the mobility project from a psychiatric hospital, where he remains a patient today. His instruction on and off the hospital grounds

proceeded steadily and his training was successfully concluded. During a period of industrial therapy at the hospital, he performed well in a job which required him to travel extensively throughout the buildings and grounds of the hospital.

Miss M.D. is a 41 year old woman with a visual impairment reported as total blindness due to excessive alcoholism. She was referred for mobility training from a psychiatric hospital where she remains a patient today. During the first few months of instruction with this patient training went so poorly that the mobility instructor recommended suspension of training. However, hospital authorities requested continuation of instruction on the basis of the improvement in this woman's psychiatric condition during training. Consequently, training was continued until she reached a definite plateau. While not a good foot traveler, by usual criteria, she is a more stable psychiatric patient and a more active member of the hospital community.

Suspended From Training

The following 6 sketches describe briefly the experiences of the trainees who failed to make satisfactory headway during training.

Mrs. B.L. is a 50 year old female. Her visual acuity was reported as total blindness in both eyes. Her eye condition was diagnosed as cataracts. She reported receiving no previous mobility training.

Mrs. L. made very little progress during her training. She was extremely fearful. Even though she expressed an interest in mobility, it became evident that she was not emotionally equipped nor was she motivated to take the training. After a constant series of broken appointments, the decision was made to terminate mobility services with the understanding that it would be available at some later time if she really desired to renew the training.

Mr. J.R. is a 57 year old male whose visual impairment resulted from glaucoma. He can detect hand movements at close range with the left eye and there is no light perception in the right eye. He was found also to have a very severe cardiac condition coupled with edema in his legs and a peculiar twitching of his head. Under normal screening procedures this would have eliminated him from participation in mobility training; however, he was accepted as a home bound mobility client. After a short period of training, during which he made little progress, instruction was suspended for follow-up medical care. It appears unlikely that Mr. R. will resume training.

Mr. M.E. is a 55 year old male who is totally blind. He had received prior mobility training but had been inactive for more than four years. He made very slow progress during the five weeks

of training. His standing posture was poor which in turn affected his gait and stance, and there was no improvement. Coupled with this was the trainee's low tolerance point. The trainee was suspended for low performance and it is not anticipated that his physical condition or mental attitude will improve to the point that he could profit from additional training.

Mrs. M.R. is a 53 year old female. Her visual acuity was reported as 20/200 in her right eye and light perception in her left eye. Her eye condition has been diagnosed as glaucoma.

Mrs. R. proved to be an erratic, inconsistent and somewhat poorly adjusted person. During the initial stage of training, she had to be convinced that it was in her best interest to carry a cane. She did not want to be identified with the blind. Once training started, she advanced very rapidly to a certain point. Later, she began numerous rationalizations as to why she could not keep her appointments. Finally, she asked to be terminated subject to such time that she felt that she could cope emotionally with the use of a cane. She was terminated with the understanding that training may be available at some subsequent time.

Mrs. M.W. is a 63 year old female. Her visual acuity was reported as 20/50 bilaterally with a severely restricted field. Her eye condition was diagnosed as glaucoma. She had received no previous mobility training.

Mrs. W. received about four weeks training in her immediate neighborhood before training had to be terminated. She became so emotionally upset after several weeks of training with the cane that she had to be confined to her home by her physician. Apparently, this resulted from the fact that the use of the cane caused her to identify too strongly with total blindness. Because of the very nature and the depth of her emotional state, it is doubtful if she will ever be suitable for effective mobility training.

Miss B.S. is a 36 year old woman whose visual impairment was reported as bilateral blindness due to congenital abnormalities. She was referred to the mobility project by a community agency to sharpen previously learned mobility skills, which had been unused for several years. Her training lasted approximately three months. However, too many broken appointments and an increasingly careless attitude toward the training as a whole finally led the mobility instructor to terminate training.

Remaining in Training

The 13 sketches which follow describe the experience of those who remained in training at the end of this period. The D.C. Department of Vocational Rehabilitation will continue to offer the mobility service begun under this project and these trainees will of course continue to receive instruction.

Mr. S.C. is a 15 year old male. His visual acuity was reported as enucleation of the right eye and finger counting at two feet with the left eye. His eye condition was diagnosed as congenital glaucoma. He was also diagnosed as mentally retarded. He had received no previous mobility instruction.

Although mildly retarded, Mr. S. put forth tremendous effort and was most eager to participate in the mobility program. A great deal of time was spent in the area of sensory training. This enabled him to learn without the achievement seeming to be laborious. When training began he was a pupil in the Pilot School for Blind Children, which enrolls multiply handicapped blind children. At this stage, he is able to travel around a four block square with ease and confidence. Since school is out for the summer and he is in a summer camp program he will not be available for additional mobility until later. Nevertheless, in view of his mental condition, he will only be able to achieve limited mobility goals.

Mr. E.F. is a 48 year old male. His visual acuity has been reported as 5/200 in the left eye and light perception in the right eye. His eye condition has been diagnosed as diabetic retinopathy. He had received no previous mobility training.

Mr. F. was an extremely alert, intelligent and highly motivated person. He progressed extremely fast. He was able to grasp the mechanics of the touch technique almost immediately. He was able to retain and recall information about his environment with relative ease. He had extensive training in a residential setting and performed extremely well. Currently, he is travelling in a small business district and is progressing equally well. Before very long, he should be advancing to public transportation with an ultimate goal of employment.

Mr. T.R. is a 59 year old male. His visual acuity has been reported as hand movement in both eyes. His eye condition has been diagnosed as retinal detachment. He is reported to have had no previous mobility training.

Mr. R. has been a client for several months. When training started, he was extremely depressed. He refused all other services of the agency except mobility. After several conversations and a few lessons, he began to make progress in his orientation and mobility. As he progressed, there appeared to be a corresponding decrease in the amount of depression and self-pity expressed. At this stage of training, he is an eager, responsive person who has advanced to travel in a residential setting. With enough time and effort on his part, it is felt that he can become a very good traveler.

S.H. is a 9 year old male. His visual impairment is reported as light perception, bilaterally. His eye condition has been diagnosed as retrolental fibroplasia. He was also diagnosed as

mildly retarded. He had received no previous mobility training.

S. was an obese, eager and highly motivated trainee from the Pilot School for Blind Children. He was able to use his light perception quite effectively in his travels. The emphasis was placed on development and refinement of his other senses. Because of his obesity, he had some difficulty in moving about. A variety of exercises were designed to help tone his muscles and to help him develop greater coordination.

There was small, but noticeable progress in both his physical and sensory development. Sensory training will be resumed when school reopens in the fall of 1967.

Miss K. was an extrovertive, eager and determined trainee from the Pilot School for Blind Children. She received some work in the mechanics of orienting herself to her environment and how to utilize protective measures while traveling in an indoor setting. She had acute senses that primarily required refining. She was absent from school so often that it was difficult to develop any continuity in refining her senses. Work is to be continued with her when school opens in the fall.

Mr. H.T. is a 50 year old male who is totally blind. His blindness resulted from a solution of lye being thrown into his face. This also resulted in 2nd and 3rd degree burns of the face, neck, shoulders and torso. Training with Mr. T. began after a convalescence of one year. Thus far, he has reached the stage where he can safely and independently travel in small residential areas. Because of the nature of his burns, he has missed many of his scheduled lessons for medical follow-up at a local hospital. Subsequently, he will return to a full mobility schedule for completion of his training.

Miss M.B. is a 31 year old female whose total blindness is due to corneal scarring. She is currently in training and functioning at a very low level. She is congenitally blind and has been known previously to this Department, the Columbia Lighthouse for the Blind, and the D.C. Public School System. She is a very difficult person to work with. Her anxiety appears to stem from a period when many promises were unfulfilled by her parents and friends and her inability to attend school regularly due to sickness as a child.

Mrs. M.H. is a 75 year old female who was referred from one of the geriatric centers in Washington, D.C. She is totally blind in the right eye and can detect light at 20 feet in the left eye. Her visual impairment resulted from uncontrolled glaucoma. Mrs. H., in spite of her age, possessed exceptional stamina and an outgoing personality. Her mobility training has consisted of traveling within a very large housing complex and limited exposure to travel conditions in a small residential community.

Mrs. M.W. is a 64 year old female who is suffering from a progressive loss of vision due to glaucoma. When she was referred, her visual acuity in the right eye was 20/400 with the field restricted to 15 degrees, and total blindness in the left eye. Her progress has been sporatic. Because of the suddenness of her impairment she has not adequately adjusted to her blindness; however, her motivation stems from her desire to remain independent. Presently, she is making street crossings in a residential community while utilizing automatic traffic lights.

Mr. L.H. is a 42 year old male whose total blindness is due diabetic retinopathy. Because of cold weather and his recent relocations, he has missed many of his lessons. In addition to that, Mr. H. is a very brittle diabetic which is more handicapping to him than blindness. He has a difficult time maintaining his balance and has very poor tactile perception. At this stage of his training, he is being groomed for travel in small business areas via public transportation.

Mrs. B.M. is a 63 year old female whose right leg was amputated above the knee in 1950, due to diabetes. Subsequently, this condition also caused serious loss of vision which at the time of referral was reported as 20/400 in the right eye and total blindness in the left eye. When she was referred for mobility training, her greatest difficulty was in making adjustments to a new prosthetic leg. She was taught how to utilize the long cane effectively while ambulating on the prosthetic leg. Her travel consisted of a complete familiarization to the housing complex where she is now living.

I.P. is a 3 year old male who is a student in the Pilot School for Blind Children. When this totally blind child was referred, he did not ambulate at all. This was due, in part, to his growth and development coupled with the lack of personnel available to supervise his training both at home and at school. When training was begun, there was little cross communication. However, feedback was measured in terms of facial expression and his bodily responds to auditory information. Currently, he is walking quite freely and as this is being written, he is participating in a summer camp for blind children. In retrospect, it is not known why he did not walk; however, he will continue his training at the end of the summer camp.

T.C. is a 4 year old male who travels quite well. He is totally blind. Like many of the children attending the Pilot School for Blind Children, there is very little verbal cross communication. However, his ability to respond to auditory cues is outstanding. The reinforcement of the training when he returns to his home environment is a big factor in his forward progress. Flexible sensory training techniques, which have been introduced to his parents, and his participation in a recent camp have helped greatly in allowing him to react favorably to his

environment. Training with him will continue.

Other Staff Activities

During the three years of this project the mobility staff participated in a number of related activities in addition to their daily instructional duties. These included furnishing consultation and guidance to staff members of other agencies and institutions serving blind persons; giving lectures and demonstrations to medical students; nurses and other allied health personnel about basic orientation and guidance techniques useful when working with blind persons; developing and displaying informational exhibits concerning mobility training for persons; participating in radio interviews about blindness and mobility training; and preparing a brochure on the Department's mobility training program for general distribution in Washington, D.C. A mobility instructor has been a consultant to Saint Elizabeths Hospital, a mental institution in Washington, D.C., during the entire period of this report. In addition to training directly several hospital patients, he worked to assist the hospital in staff development for a program of blind rehabilitation within the hospital.

During the last six months of the project, both mobility instructors were consultants to the Pilot School for Blind Children in Washington, D.C., an institution for the multiply handicapped blind child. The students in the Pilot School suffer from a variety of disabilities in addition to blindness including emotional disturbances and mental retardation. The mobility problems of these children are extraordinary and require ingenuity, time and patience. In addition to work with individual children, the mobility instructors worked with the teachers of the school regarding mobility and orientation concepts useful in dealing with this group of children.

Late in 1965, an invitation was extended to the mobility staff to visit Garfield Terrace, a housing complex for older persons administered by the National Capital Housing Authority.

This meeting resulted in an instructor being assigned to Garfield Terrace as a consultant to study and evaluate the mobility needs of the geriatric tenants with major visual impairments. Joint efforts by the medical staff, the housing manager, and the recreational staff resulted in the screening of six individuals. Further screening of these individuals by ophthalmological consultants resulted in the selection of three of them for mobility training.

Because of their age, their physical, and their social and financial status, the mobility needs of these three individuals were found to be limited. Their greatest needs were found to be freedom and independence to travel at will throughout the housing complex and it's grounds. They did exceptionally well in their

mobility lessons. Their progress interested fourteen other residents who, when screened, were found to be suffering from both minor and major visual impairments. The progress at Garfield Terrace led to similar programs at two other geriatric centers, Claridge House, and Arthur Capper Housing Development.

Social Work Service

The project social worker was responsible for providing social case services for potential trainees who were not able to engage in mobility instruction because of problems of personal adjustment. He assisted the supervisor and mobility instructors in screening clients with special reference to social and economic problems which could impede effective participation in mobility instruction. He was particularly effective in working with families of blind children who were prone to be overly protective or sometimes rejective in dealing with their children. He was responsible for securing comprehensive medical and psychological records prior to the commencement of mobility training.

IV. Discussions and Implication of Results

The results of the mobility training project's three years of operation have been gratifying and encouraging. Generally speaking, mobility training has broadened and enriched the lives of the trainees and made them more flexible and effective individuals. The experience of the project must be interpreted in the light of it's purpose. Restated briefly, the purpose of the project was to give high-quality mobility training to blind residents of Washington, D.C. who, previously, did not have access to such instruction. This group included the elderly, children, and those who, for other reasons, were not likely candidates for regular vocational rehabilitation services.

It seems clear that this purpose has been fulfilled and that the outcome is entirely positive. It is equally clear that the travel techniques originally developed for a vigorous young adult population are well suited also to training the very young and the elderly with minor modifications. These results indicate that a community based mobility program, with the proper amount of permissiveness and flexibility, can work profitably with the entire age range of the blind population without sacrificing principles and standards of sound mobility instruction.

Children

Working with children was in many ways the most rewarding. Watching these young people develop independence and assurance in an area so vitally affecting their lives was most satisfying. Although they represented less than ten percent of all referees, all entered training and none failed to reach some

satisfactory level of training during the project report period. With the children, it is difficult statistically to reflect the differences between those who completed training during the report period, and those who remained in training at the end of the report period. Those in the elementary school grades at the beginning of the three year period had their training interrupted one or more times because they had reached a satisfactory level of performance in terms of their daily activities. Later, training with these youngsters was renewed for varying periods of time to accomodate the need for higher level of mobility. This need resulted from graduation to a junior or senior high school and the accompanying demands of maturing individuals for wider ranging activities. The flexibility of a community based mobility program fits nicely into this picture. It is strongly suggested that the mobility needs of children cannot be met satisfactorily unless the program is available where and when the children need it. It is unrealistic and unfair to expect the children to master the "whole training course" at one time.

The following impressions are drawn from experience in mobility training with children.

1. Blindisms in children tend to diminish or become less pronounced following mobility training. This is particularly true among blind children who are thrown together with sighted children in an integrated school program. It is felt that mobility instruction gives impetus to this, but that daily association with sighted children is the dominant factor.

2. Blind children receiving mobility instruction usually will exhibit some negative feelings about using the cane in certain situations. The reaction is by no means specific or standard but it occurs in a high percentage of cases. It seems to occur when the young trainee decides perhaps unconsciously, that the cane stands between him and his sighted peers. Canes left in lockers during the school day or hooked around the neck while traveling to and from school with friends are obvious examples. It is a part of the mobility instructor's art to determine when these attitudes begin to undermine the concept of realistic safe independence, which he wants to develop in his young pupil.

3. A program of mobility instruction should have enough permanence and flexibility to allow for a temporary suspension of training with the intention to resume it again at some specified time. For example, it may not be appropriate to carry the training of a 12 year old child into the more advanced phases of training in heavy traffic if this is not necessarily a part of his daily pattern of living.

4. Work with pre-school age blind children points out the desirability of beginning sensory training with the youngster

as soon as it is possible. The quality of training during these formative years may set the pattern or level of independence they will achieve later in life. Whereas a cane is not desirable at this age, sensory training and orientation cannot be too forcefully emphasized. The necessity for working closely with the family to accept and reinforce these techniques is also vitally important.

5. Work with the mentally retarded blind children pointed out the necessity of limiting the training to the simpler levels. Of course, degree of retardation and visual acuity are key factors in setting the limitation. It is not an impossible task, though it does require much patience and a wide imagination.

One interesting deduction which can be drawn from the results of the past three years is that mobility training for individuals in the project group, not including children, took longer than might have been expected. The average time for those who completed training was 22 weeks which is significantly longer than the time spent on mobility training in rehabilitation centers. No figures are available with which to make an overall comparison; however, it is known that the average stay of blinded veterans in the V.A. Hospital Rehabilitation Center, Hines, Illinois, is about 18 weeks.

Three major factors seem to be involved in this increased training time. The first is directly related to the composition of the group involved. It takes more time to teach elderly people and those not acceptable as vocational rehabilitation clients. To be sure, the various reasons for this do not apply equally in both sub-groups. In each group, however, there are factors which require more training time.

Elderly Persons

Age per se often diminishes and limits an individual's physical capacity and he is unable to move about as quickly or for sustained periods of time. Age may also dull the perception of an individual making it necessary to proceed more slowly in explaining procedures and the like. Inclement weather and extremes of heat and cold also kept members of this sub-group from training. Disabilities usually associated with advancing age such as arthritis, hearing loss, peripheral vascular insufficiency, and the like have a tendency to complicate the factors already mentioned.

Individuals Infeasible for Vocational Rehabilitation Training

In most instances, the same reasons which caused these individuals to be tabbed "infeasible" were also the reasons

which resulted in increased time for mobility training. Many in this sub-group were slow to perceive and slow to respond. Generally, they were poorly motivated and many had never truly set and attained any realistic goal for themselves. Marginal capacity across the board associated with or caused by disabilities, in addition to blindness including mental retardation, made it necessary to devote more time and more patience to achieve satisfactory results.

The second general consideration for increased training time is related to the fact that the instruction was given on the trainee's "home ground." Here was an opportunity for instructor and trainee to confront specific travel situations and problems which were pertinent to the trainee although not necessarily related to the successful attainment of a mobility goal. For example, when a mobility trainee is working in a small business area, he may be required to negotiate one or more street intersections and proceed to a drug store, enter, conduct some business, and return to the starting point. When he has done this sufficiently well to satisfy his instructor, it may be said that he has completed that lesson.

If the same trainee lives near the small business area and will have occasion to go there repeatedly as an independent foot traveler, there are objectives in addition to the drug store which are important to him; the barber shop, the bank, the grocery store and the like. Reaching one or more of these additional objectives may involve a different travel route and different travel problems. In these situations, the mobility instructors took the extra time needed to familiarize the trainees with the areas in which they would be traveling on a day to day basis. These circumstances will always arise in a community-based mobility program and the extra training time should be available to accomplish these valid ends.

A third general reason for increased training time is concerned with the fact that the individuals in the project group were not totally involved in a training program such as would be found in a rehabilitation center. For the most part, they were individuals living at home engaged in a variety of meaningful or meaningless activities, in addition to mobility training. This lack of control over the activities of trainees took its toll in the form of broken appointments. Trips out of the city, family and household responsibilities, emergencies, and simple reluctance to "go out today" caused the mobility instructors to lose some training time. This lack of control was not responsible for a lot of lost time but it is a factor which needs to be taken into consideration with respect to a community-based mobility training program.

The following impressions and conclusions are felt to be

important in the light of the project's experience.

1. Certain observations were made while rendering mobility training to residents of geriatric units in the National Capital Housing Authority.

A. Their limited mobility needs were attributed more to age and patterns of daily living than to general health.

B. Having these individuals congregated in housing complexes made it easier to work with more trainees in less time.

C. Since the mobility goals of many were confined to traveling in and about the housing complex, seasonal extremes of weather and temperature had little effect upon training.

D. The architectural design of these housing complexes lent itself quite well to training elderly blind people.

E. Following a brief exposure to the results of mobility training with blind residents in a geriatric housing complex, the Housing Authority was noticeably more accepting of other blind applicants. It was clearly recognized that blindness, as such, need not make a prospective tenant an undesirable risk.

2. With partially sighted trainees, the key factor was helping these persons to obtain a realistic appraisal of their visual limitations and to travel safely within these limitations. It is wise to plan follow-up training for these individuals, who may lose additional sight in the future.

3. Very early mobility instruction may not be productive unless it is accompanied by other supportive services, which enable the persons to come to grips with the losses imposed by blindness. Unrelieved anxiety concerning such things as regaining vision, losing remaining vision, affect on family and friends and affect on job, tend to neutralize the efforts of the mobility instructor.

4. Individuals receiving mobility training who did not have or who failed to develop concurrent vocational, avocational or social goals, often found themselves with a growing capacity for independent movement but no place to go. This is particularly true of older persons and the situation presented somewhat of a dilemma. The D.C. Department of Vocational Rehabilitation has not been able to provide appropriate supportive services to those who cannot establish vocational feasibility. Also, it was felt that the time and effort of the mobility project training staff should not be dissipated in organizing leisure time activities

for these trainees.

5. Daily instruction over a period of several months should be the aim of any program which intends to produce a stable, well-oriented foot traveler.

6. The effectiveness of mobility training with institutionalized blind persons seems clear, in that the independence created makes them more acceptable residents or patients. With respect to mental patients, however, an additional potential benefit may have been identified which relates to an improvement of their psychiatric status. These factors need to be explored more thoroughly.

7. The job of the mobility instructor can be made easier and more effective with the services of a well qualified social worker because of the wide variety of social, economic, and emotional problems that accompany blindness. By well qualified is meant one who has knowledge of blindness and understands it's social, economic, and emotional effects on persons (family, general public and blind persons themselves).

The value of the social worker in providing comprehensive services, particularly with newly blinded persons, should be stressed. Often without this supportive service many persons eligible for mobility training are unable to accept or benefit effectively from the training because of the necessity of coping with so many additional problems. The project's experience also indicates that a social worker is effective in helping families of blind persons to deal with their personal misgivings about mobility training. It is evident that without the approval, aid, and encouragement of the family, mobility training is difficult to carry on and it's effects are easily attenuated.